James Acker :
We're getting back on schedule, so now David Mocko will present]
(and I'm a co-author). I have a couple of questions I'll send to Dr. Wimberly.

Mike Wimberly :
OK - Thanks!

James Acker :
Since hydrology is a factor in disease transmission, David's talk is quite relevant to that.

David - you're the man. (David is in the building next to ours here at Goddard.)

James Acker :
Folks, this is our first glitch. We'll try uploading from my computer.

OK, I have David's presentation uploaded - computers are strange beasts!
David, can you provide the text and then say next slide.

David Mocko :
Sorry all - thanks James for fixing. I'll be glad to do so.

Slide 1
Hi everyone. Thanks for your interest in NLDAS and its Giovanni instance.

I'd like to thank my co-authors for their work with Giovanni and the NLDAS datasets at the GES DISC.

NLDAS has been active for over 10 years, and there are many people who had, and continue to have, a very active role in its development.

Particularly, Youlong Xia and Michael Ek at NOAA/EMC who continue to generate the real-time datasets and have led many different studies evaluating the outputs.

Slide 2
Outline: 1) Intro to NLDAS; 2) Giovanni and NLDAS; 3) Coming soon; 4) Next phase

Slide 3
There are two phases of NLDAS. The current is Phase 2, from Jan 1979 to present.

Slide 4
NLDAS-2 forcing is a best-available blend of model-based reanalysis and of observations

Slide 5
The backbone of the NLDAS-2 forcing dataset is the daily 1/8th-degree precipitation analysis by CPC. The other precipitation datasets are only used to split this daily value into hourly amounts.

Slide 6
This table shows the priority for the temporal disaggregation for each region, depending on date and spatial extent. Follow the columns down by location.

Note that although the NLDAS domain extends into Canada, the precipitation forcing is of a much lower quality than over CONUS and Mexico.

Slide 7
Here is an example of some of the precipitation datasets for a particular date, showing their spatial extents as well as their resolution.

Slide 8
The diurnal cycle of the precipitation over CONUS was extensively evaluated.
This study looked at the hourly precipitation over CONUS during the period when the radar data was primarily used for the temporal disaggregation.

Note the precipitation maximum around 00Z in the summertime in box III between 80 and 75 West.

Slide 9
The hourly NLDAS-2 forcing was used to drive four separate LSMs.

Slide 10
Youlong Xia led some recent papers evaluating the model-simulations soil moisture and runoff anomalies for the four LSMs.

Slide 11
Using a routed runoff model, comparisons were also made to streamflow observations.
A multi-model ensemble mean is also shown.

Slide 12
A real-time NLDAS Drought Monitor webpage updates daily the anomalies and percentiles of soil moisture, runoff, streamflow, ET, snow, and precipitation over CONUS.

Slide 13
The NLDAS as well as Global LDAS (GLDAS) datasets are available from the GES DISC's Hydrology DISC. LPRM soil moisture is also available here.

Slide 14
The GES DISC has also integrated NLDAS/GLDAS datasets into CUAHSI's HIS.

Slide 15
The next several slides show some Giovanni-created images by Hualan and by Jim, along with links to news articles about the images and events.

Slide 16
Here, the top left panel is the DJF averaged snow cover fraction for the winter of 2011, and the top right panel is for the winter of 2012.

James Acker:
News articles findable in our News archive

David Mocko :

The lower left panel shows the area-averaged time series of the snow cover fraction. The lower right panel is the area-averaged surface skin temperature. The winter of 2012 (black lines) was much warmer and had much less snow.

Slide 17
Tropical Storm Lee brought heavy rains up the East Coast. The solid lines show the precipitation that occurred in the three gray boxes during the period. The dashed lines show the increase of the soil moisture resulting from the rainfall.

Slide 18
A severe derecho occurred in the U.S. on 29 Jun 2012. Giovanni was used to plot the NLDAS-2 precipitation, and a comparison was made to a radar composite summary.

Slide 19
A severe drought occurred in the central U.S in 2012 (and is continuing for many regions).
Hurricane Isaac brought heavy rains to part of this region, reducing the drought severity (see the gray boxes).
Area-averages of the NLDAS-2 precipitation and of the Noah and Mosaic soil moistures for this region were created with Giovanni.

William Teng :
News archive: http://disc.sci.gsfc.nasa.gov/additional/news

Slide 20
This slide lists some NLDAS products that will soon be added to the GES DISC and to Giovanni.
Monthly-means, as well as NLDAS Phase 2 VIC and Sacramento LSM data.

James Acker:
I think we should make a Feature item out of this slide

Slide 21
The Land Information System (LIS) will be used as the software framework for the next phase of NLDAS.

Slide 22
The next phase will have new and upgraded LSMs and include data assimilation of soil moisture and snow products. All products will be fully evaluated.

Slide 23
Some recent work by the LIS group has shown that soil moisture DA can improve the simulated ET

Slide 24
Snow assimilation also improves the simulation of snow depths compared to in situ data.

Slide 25
Summary

Slide 26
Many thanks to the NLDAS team (truly a collaboration project), the LIS team, and the GES DISC

Slide 27
Links to the NLDAS documentation, datasets, and to the LIS software.

Please sign up for the LDAS datasets mailing list (see the GES DISC site for how to sign up).

Thanks to all - my apologies again for the problem loading the slides….

James Acker:
Thanks, Dave! Remember that all the presentations (with links) will be on our site soon after the workshop

That's OK, sometimes computers don't connect to the projector at meetings, too

Since we need a new Feature, I think the impact of Hurricane Isaac will be a good one.